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ABSTRACT

The military has responded to recent demographic projections by upgrading its literacy standards: almost 95 percent of new recruits are high school graduates. In order to maintain its high recruitment standard, the military relies heavily on a standardized test, the Armed Services Vocational Aptitude Battery. Those who have not graduated from high school or who hold the General Educational Development certificate must have higher than average scores in order to enlist. However, researchers such as Sticht maintain that heavy reliance on literacy tests are unfair to some young people and troublesome for public policy. Sticht contends that these tests exclude many of the most needy young adults from obtaining the benefits of military service, although such tests are imperfect for determining suitability for the military. Despite recruits with higher literacy skills, remedial literacy programs in the military are increasing. This training emphasizes two strategies--contextual literacy skills (those developed through training in job-related skills) and greater use of technology. Many of the military's research findings and training programs are adaptable to the civilian workplace. (Two bar graphs are included, describing (1) the performance of white and black soldiers on job knowledge and performance tests and supervisor's ratings of proficiency and (2) the rate of completion of 36 months of service by potentially ineligible and eligible comparison groups in low and high complexity jobs. Addresses and telephone numbers for five sources of information on literacy and the military are listed.) (CML)

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MYTH # 12:

THE MILITARY IS RUNNING OUT OF BRAINPOWER

What Uncle Sam wants, he gets. Despite all the talk about scrambling to compete with the civilian sector over able-minded young people and warnings about a high-tech military trying to move with low-skilled soldiers, the armed forces are doing okay with recruitment for an all-volunteer service.

Not that literacy levels of recruits aren't studied carefully. Or that training programs don't take their basic skills needs into consideration. But a combination of intensive recruitment, long range planning, experiments with skill training that integrates literacy, and creative use of technology has allowed the armed forces to increase their entering literacy standards, despite a shrinking pool of eligible recruits. Mixed in with the military scene are policies and resources highly relevant to the civilian area. While "technology transfer" between the military and civilian sectors garners a lot of attention, the military also is solidly in the human resources development business. It is one of the

Update on Literacy News

Two major proposals for a much larger federal investment in adult literacy have been introduced in Congress.

The Adult Literacy and Employability Act, following up on many of the recommendations of *Jump Start*, the Southport Institute's recommendations for federal adult literacy investments, was introduced Aug. 3 by Rep. Tom Sawyer (D-Ohio). It would establish federal, state and local coordinating agencies to develop and deliver high quality literacy programs, (including a Cabinet-level coordinating council and a national adult literacy center for research). Federal dollars would be targeted at helping states and local programs improve adult literacy education, including heavier investments in training and in the use of technology. The proposal also would strengthen the new Even Start program that emphasizes family literacy training and federal investment in workforce literacy.

On the Senate side, Paul Simon (D-Ill.) introduced his Comprehensive Illiteracy Elimination Act, which contains many of the same areas as the Sawyer bill. It would establish a joint Congressional and Presidential task force to launch literacy coordination; establish a Cabinet council; and provide for a separate office on adult literacy, a national center and state resource centers. It also emphasizes family and workplace literacy programs (incorporating amendments to the Job Training Partnership Act). Also included are support for library, student literacy and other volunteer efforts.

September 8 will be International Literacy Day, as well as National Literacy Day in the U.S. The American Newspaper Publishers Association, International Reading Association, and other national groups are sponsoring special events in local communities for National Literacy Day. The international day is a kickoff to the International Literacy Year of the United Nations, to be held with various activities through 1990, including a World Conference on Education For All in Bangkok in March.

The Second National Adult Literacy Congress will be held Sept. 9-12 in Washington, DC, sponsored by several organizations. The corporate sponsors are *USA Today* and the Gannett Foundation. Participants will draft resolutions about the illiteracy problem to be presented to Capitol Hill.

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largest collectors of data about young people in the country. This information becomes the basis of policy set by Congress and of actions that have far-reaching effects on almost all youth.

What does the military know about American youth, particularly their literacy levels?

Making Policy Out of Demographics

Between 1981 and 1995, the number of youth ages 18-24 will have decreased by 22 percent, or down to 24 million in the mid-1990s, compared to 30 million at the beginning of the 1980s. Further, an increasingly larger percentage of high school graduates attend college (about 56 percent, although more than one-half now are female). In 1985, Gordon Berlin, then with the Ford Foundation, estimated the military would have to increase its share of the remainder of the talent pool of youth from one in eight to one of three by 1995.

The military responded to these projections in several ways. Instead of lowering literacy standards, it raised them. Basic skills have not been a major problem for the Air Force, nor a significant one for the Navy. It is the Army which worries most over literacy levels. However, the Army, as of two years ago, set a high school diploma as almost the sole initial literacy standard for eligibility--it downgraded holders of the General Education Development diploma (GED) to a second tier, along with those receiving any kind of alternate high school graduation. The lowest tier are those who dropped out of high school. Today, almost 95 percent of new recruits are high school graduates.

The reasoning is based on long-term research sponsored primarily by the Army Research Institute. According to Wayne (Steve) Sellman, director of Accession Policy for the Department of Defense, those who graduate from high school demonstrate an adaptability that non-graduates generally do not have. They are more likely to stick it out in the military.

A study on military enlistment policy for Sellman's office by the Human Resources Research Organization concluded that, regardless of the academic quality of their education, graduates of the traditional classroom "are better prepared for military classrooms, rules, and regulations. The traditional school system is rather rigid, unyielding to individual needs and desires ... Overall, traditional graduates are a better fit for the military mold."

Recruits who leave the service before the end of 30 months cost the military services $18,400 each in lost investments, says Sellman.

There are several other factors affecting literacy standards in the military. It is offering lots of incentives to current personnel to reenlist. Increasing the retention rate of personnel reduces the number that has to be taken in and lessens the need for remedial basic skills training, according to David Grissmer, deputy director of the Defense Manpower Research Center at the RAND Corp.

Piggybacking on the High School and Beyond surveys of the U.S. Department of Education, the Pentagon has a good sense of what will be most successful in appealing to high school graduates. It now spends approximately $2 billion a year on recruitment advertising and educational benefits similar to the GI bill. As a public policy issue, it might be pointed out that teaching is another profession that must appeal to high school graduates if the ranks are to be filled, but the current media campaign to recruit for the teaching profession, "Reach for the Power: Teach" is making-do with less than $1.7 million in funding, plus $30 million in additional donated advertising space and time.

Then, too, a peacetime military always has been more selective in recruitment. The grade-level standard for recruits drops in wartime (to fourth-grade equivalency in the Korean War).

According to Grissmer, arms agreement negotiations may further reduce the size of the military, offsetting an oncoming problem--that of higher wages in the civilian sector for young people. Since the beginning of the 1980s, Congress has increased the real wages of those in the military by 14 percent, as well as provided extensive education benefits. However, as the smaller youth cohort garners higher civilian wages, the military may lose some of its competitive advantage, Grissmer says.

Military Research on Literacy

It was military studies in the early 1980s of the literacy levels of recruits compared to the age-group population as a whole that discovered a major piece of data on intergenerational literacy. Looking at such factors as income and education levels and occupations, the

studies found that the only statistically significant factor in the academic achievement of young people was the education level of the mother.

This same study, of the 18-23-age group, found that 4.8 percent (or 1.2 million) were reading below the fifth grade level. More than 41 percent (10.2 million) were reading below the level of a student entering the ninth grade.

Overall, the average young adult was reading at the fourth month of the ninth grade. For black adults, the average reading level was seventh grade; for Hispanics, the seventh month of the seventh grade.

It should be pointed out that since this study was completed, assessing literacy standards has moved from grade level to "proficiencies," as those developed by the National Assessment of Educational Progress. In other words, a numerical scale is applied to levels of proficiency with reading assignments, such as understanding a bus schedule.

According to Thomas Sticht, president of Applied Behavioral and Cognitive Sciences, Inc., and a major researcher on the military and literacy, the military services are successful at recruiting among those with literacy levels above the average. In this decade, they have taken in almost no one with a reading level below the fifth grade and a decreasing number of those reading below the ninth-grade level (only about one-fourth).

The Military and Testing Policies

The military was the first sector to use large-scale testing--starting in World War I--and continues to rely heavily on testing procedures. In fact, the military use of tests is the one area where Congress becomes involved in using test data to set public policy, excluding by law those who fall in the lowest category on standard military tests from serving in the armed forces. (Level V)

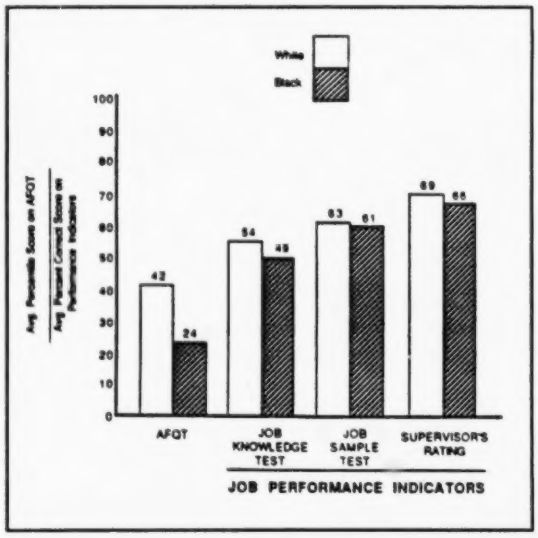
The official military test is the Armed Forces Qualification Test (AFQT), which is part of a total battery of 10 tests, such as word knowledge, paragraph comprehension, numerical operations, general science and electronics information. The total test is the Armed Services Vocational Aptitude Battery; the AFQT includes the basic skills (reading and math) subtests of the vocational aptitude. There are five categories of achievement on the AFQT--from I, or "well above average" to V, or "well below average," those excluded by Congress.

Today, with peacetime higher standards in effect, those who have not graduated from high school or who hold alternative diplomas, such as a GED, must have higher AFQT scores than the average high school graduate in order to enlist.

Fairness, Social Policy and Military Tests

Is the heavy reliance on literacy tests unfair to young people and does it create troublesome public policy? Sticht thinks so, and his research on two periods of military recruitment in the past two decades has become a controversial topic among both military and civilian researchers. In a paper for the National Commission on Testing and Public Policy earlier this year, Sticht notes the general debate over paper-and-pencil tests designed to indicate "aptitude." Yet, he says the federal government, through Congressional mandates and military policy, "has explicitly condoned the categorizing of citizens into those fit for and those unfit for military duty by reason of mental ability, as assessed by such tests." He explains:

> This has the effect of preventing many of the most needy young adults, including many minorities and women, from obtaining the health, training, and education benefits that accompany military service. In fiscal year 1985 alone some 90,000 adults (13 percent of applicants) were denied those benefits because of mental disqualifications.



From: Military Testing and Public Policy: Selected Studies of Lower Aptitude Personnel by Thomas G. Sticht, 1989

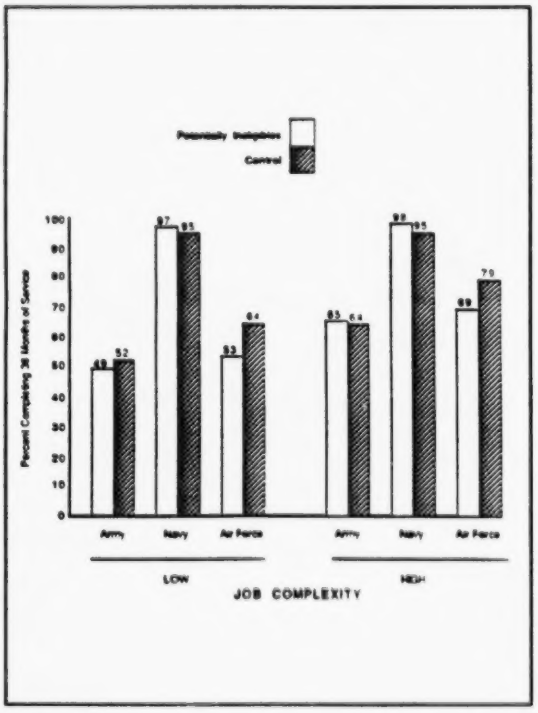
Performance of white and black soldiers on job knowledge and performance tests, and supervisor's ratings of proficiency.

Sticht contends that Congress' approval of military mental tests as a screening device "gives tacit approval to the use of standardized tests in human resources development and utilization in both military and civilian settings." Tests are imperfect instruments for determining the suitability for the military, Sticht says, pointing to two times when they were not used exclusively--one on purpose and one an accident.

In the late 1960s, Defense Secretary Robert McNamara lowered the standards on the AFQT for admission into the military (to both increase forces for the Vietnam conflict and to provide access to the military by undereducated and needy adults as a policy initiative of the War on Poverty). This was known as Project 100,000. Military opponents of the plan preferred to call it "McNamara's Moron Corps."

While these recruits might be more costly to train, it was reasoned that they would be better prepared for civilian life and, thus, less costly to society.

The controlled experiment, taking more than 22 percent of recruits from Category IV, gradually increased the number to 100,000 annually, two-thirds of whom served in the Army.



From: Military Testing and Public Policy: Selected Studies of Lower Aptitude Persons, by Thomas G. Sticht, 1989

Rate of completion of 36 months of service by potentially ineligible (PI) and eligible comparison groups in low and high complexity jobs.

According to Sticht, blacks and "others" in the experimental group tended to have completed 12 years of education at a higher rate than whites, but they scored lower on tests.

Research results found that there were very small differences on the effectiveness of the personnel between those whose test scores were low and a control group. A decade and a half later, more than 8,000 were still in the military services, their education levels were increased, and their pay levels "were within striking distance of the higher pay grades." Of those who left the service, 68 percent used the G.I. Bill.

The other time when a large number of low test scorers entered the military was between 1976 and 1980, when the ASVAB was mistakenly misnormed. During this time, the number of Category IV recruited into the military increased from 6 percent to 30 percent. The mistake was not discovered until 1980. Sticht's research found that attrition from the armed forces actually declined during this period.

Others contend, however, that problems with discipline increased during those years.

Another finding of research by Sticht and others is that women in the traditional testing program of the military do not score well because of their lack of technical knowledge and training.

These studies--and the value placed on the "stick-to-itness" embedded in a high school diploma--suggest that literacy levels are secondary to attitudinal ones in the military, a finding which often is collaborated by studies of the skills needed by entry-level employers.

Remedial Training and the Military

Despite recruits with higher literacy skills on the basis of traditional testing, remedial literacy programs in the military are increasing. Sticht notes that more than 307,000 soldiers were participating in on-duty remedial literacy training in fiscal 1985, up from about 200,000 in 1982. Budget projects through 1990 showed steady increases.

Grissmer estimates that 70 percent of the tasks performed by enlisted military personnel are routine, but others note that the reading difficulty of military technical materials range from the 10th to the 12th grade.

Remedial training in the military emphasizes two strategies--contextual literacy training, that is, the improvement

of literacy skills through training for specific job-related skills; and greater use of technology.

The Job Skills Education Program, sponsored by the Army Research Institute and developed by Florida State University, teaches "prerequisite competencies," not job skills specifically but basic skills taught in the context of job requirements. It is based on an analysis of the tasks performed by soldiers, resulting in a taxonomy listing of more than 200 prerequisite competencies, such as reading a diagram or solving a math problem. These skills are needed in order for soldiers to learn the information required to perform certain tasks, such as repair a tank.

JSEP consists of 180 diagnostic review lessons and 120 tutorial sessions that are self-paced and allow open entry and open exit. The system is computer-based, providing diagnosis, prescriptions, help, tracking and reports. The system runs on both MicroTICCIT and the PLATO computer-based system. Tested at several Army sites, it began to be phased in universally in 1987.

In the sense that JSEP is used for soldiers considered weak in academic skills, it is remedial. But, says Beatrice Farr of the Army Research Institute, "it is not remedial in the ways of typical basic skills curricula. For example, it is not aimed at any specific grade level performance, nor does it attempt to teach nonreaders basic reading. Many other programs address those needs. What JSEP does is to teach a very broad range of underlying skills that are related to job performance."

JSEP also helps participants with studying, test-taking and time-management skills.

Technology Transfer

In what the U.S. Office of Education terms the largest technology transfer between the Department of Defense and the education sector, the JSEP program is being adapted to adult basic education programs.

The $600,000 pilot test is using JSEP in the White Plains, N.Y., adult education center, under an agreement with the New York State Department of Education and Florida State University.

Even those with a very low reading level appear to be able to learn some things from the program, says Paul Gieb of the Office of Vocational and Adult Education in the U.S. Office of Education: "It can be used by any adult education program to teach basic skills but also teach job skills."

General Motors is using some of the tapes in another field test at a plant in Meridian, Miss., with a special emphasis on skills needed for electronics.

Growing out of his work with contextual skills training for the military, Sticht has worked on a Functional Context Basic Skills Program produced by McGraw-Hill, which provides knowledge and skills in six areas--allied health, automotive, business, construction trades, electronics, and office. Sticht also has found that when women are taught hands-on technical skills with equipment familiar to them--such as lamps or hairdryers--they can learn just as well as men. It is the contextual framework that is important.

QUESTIONS TO ASK

o As a local policy question, it might be important to ask if stiffer military recruiting policies have affected the career plans, opportunities, or attitudes of those youth who might have joined the armed forces in the past. Has an avenue for poor youth been closed off?

o What do local recruiting offices say about their intake policies, the number passing/failing standard testing programs, quotas they have?

o Is the Armed Services Vocational Aptitude Battery given in local high schools? Do counselors use the results with graduating students? How useful is it considered?

o Are local employers using the contextual approach in their training programs to integrate basic skills? Or, are basic skills being taught separately?

o Is the "stick-to-itness" value more important to local employers than basic skills? If so, is this message getting to young people in middle and senior high schools?

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